

FAIRVIEW MOBILE HOME PARK (PWS 4010151) SOURCE WATER ASSESSMENT FINAL REPORT

May 23, 2002



State of Idaho Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for Fairview Mobile Home Park, Boise, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The Fairview Mobile Home Park (PWS # 4010151) drinking water system consists of one well. The system serves 200 people through 58 connections.

Final susceptibility scores are derived from System Construction scores, Hydrologic Sensitivity scores, and Potential Contaminant/Land Use scores. Potential Contaminants/Land Uses are divided into four categories, inorganic contaminants (IOCs, i.e. nitrates, arsenic), volatile organic contaminants (VOCs, i.e. petroleum products), synthetic organic contaminants (SOCs, i.e. pesticides), and microbial contaminants (i.e. bacteria). As different wells can be subject to various contamination settings, separate scores are given for each type of contaminant.

In terms of total susceptibility, Well #1 rates high for IOCs, automatically high for VOCs, and high for SOCs and microbials. The automatic high VOC rating was due to the presence of a VOC in the well, in this case tetrachloroethylene (PCE or PERC). System construction scores were moderate and hydrologic sensitivity scores were high. Potential contaminant/land use scores were moderate for IOCs, high for VOCs, moderate for SOCs, and low for microbial contaminants.

No SOCs have ever been tested in the well. Total coliform has been tested in the distribution system (September, 1999). Traces of fluoride, radium, and natural radiation have been detected. Nitrate has been found in quantities of 2.1 parts per million (ppm), well below the maximum contaminant level (MCL) of 10 ppm. The well exists in a priority area for the VOC PERC. PERC has been detected in the well (September, 1993). VOCs are only tested for every three years, so any detection might be an indication of a larger problem. Arsenic has been detected in the well in concentrations of 13 ppm, a level greater than the revised MCL of 10 ppm. In October, 2001, the EPA lowered the arsenic MCL from 50 ppm to 10 ppm. However, public water systems have until 2006 to meet the new requirement.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the Fairview Mobile Home Park, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system's components and its capacity). Because the arsenic in the well is greater than the revised MCL, the Fairview Mobile Home Park users may need to consider implementing engineering controls to monitor and maintain or reduce the level of this contaminant in the water system. The EPA plans to provide up to \$20 million over the next two years for research and development of more cost-effective technologies to help small systems meet the new MCL. Actions should be taken to keep a 50-foot radius circle clear from potential contaminants from around the wellhead. Any contaminant spills within the delineation should be carefully monitored and dealt with. As much of the designated assessment areas are outside the direct jurisdiction of Fairview Mobile Home Park, collaboration and partnerships with state and local agencies and industry groups are critical to the success of drinking water protection. The wells should maintain sanitary standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineation contains some urban and residential land uses. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. EPA.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Boise Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR FAIRVIEW MOBILE HOME PARK, BOISE , IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this assessment means.** Maps showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are included. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is included.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a drinking water protection program should be determined by the local community based on its own needs and limitations. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The Fairview Mobile Home Park (PWS # 4010151) drinking water system consists of one well. The system serves 200 people through 58 connections.

In terms of total susceptibility, Well #1 rates high IOCs, automatically high for VOCs, and high for SOCs and microbials. The automatic high VOC rating was due to the presence of a VOC in the well, in this case tetrachloroethylene (PCE or PERC). System construction scores were moderate and hydrologic sensitivity scores were high. Potential contaminant/land use scores were moderate for IOCs, high for VOCs, moderate for SOCs, and low for microbial contaminants.

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Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ contracted with BARR Engineering to perform the delineation using a combination of MODFLOW and a refined analytical element computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Boise Valley aquifer in the vicinity of the Fairview Mobile Home Park. The computer model used site specific data, assimilated by BARR Engineering from a variety of sources including the Fairview Mobile Home Park well log, other local area well logs, the Treasure Valley Hydrologic Project, and hydrogeologic reports (detailed below).

Treasure Valley Hydrologic Project Information (Petrich and Urban, 1996; Neely and Crockett, 1998; Petrich et al., 1999)

The “Treasure Valley” is a geopolitical region that includes the lower Boise River sub-basin. The lower Boise River sub-basin begins where the Boise River exits the mountains near the Lucky Peak Reservoir. From Lucky Peak Dam the lower Boise River flows about 64 (river) miles northwestward through the Treasure Valley to its confluence with the Snake River. The Treasure Valley Hydrologic Project area encompasses the lower Boise River area, and extends south to the Snake River. The southern area is included in the study area because of ground water flow from the Lower Boise River basin south toward the Snake River.

Significant amounts of desert area were converted to flood irrigated agriculture beginning in the 1860s. Irrigation led to increases in shallow ground water levels in some areas. The shallow groundwater levels provided an inexpensive and readily obtainable water supply that is used extensively throughout the valley. Much of the population growth in the Treasure Valley has been occurring in previously flood-irrigated agricultural areas, resulting in increased pumpage and a reduction in local aquifer recharge. In addition, irrigation in some areas has become more efficient, reducing the amount of irrigation-related infiltration. Decreasing aquifer recharge and increasing pumpage is thought to be contributing to decreasing ground water levels in some areas.

The Treasure Valley experiences a temperate and arid-to-semiarid climate. Average high temperatures range from about 90°F in summer to 36°F in winter; low temperatures range from about 20°F in winter to about 56°F in summer. The average precipitation ranges from about 8 to 14 inches throughout most of the valley, most of which falls during the colder months.

Major surface water bodies include the Boise River, Lake Lowell, and Lucky Peak Reservoir. The primary source of surface water in the Treasure Valley is precipitation falling in the high elevation area in the Boise River basin upstream of Lucky Peak Dam. Much of the runoff from high elevation areas is stored in three reservoirs: Anderson Ranch Reservoir, Arrowrock Reservoir, and Lucky Peak Reservoir.

The region's croplands are irrigated primarily with surface water through an extensive network of reservoirs and canals. The first canals were constructed in the 1860's; there are now over 1,100 miles of major and intermediate canals in the Treasure Valley. The primary sources of the irrigation water in the Treasure Valley include the Boise, Snake, and Payette Rivers. The majority of canals are owned and maintained by canal companies and irrigation districts.

Hydrogeology (from Petrich et al., 1999)

The lower Boise River sub-basin (Treasure Valley) is located within the northwest-trending topographic depression known as the western Snake River Plain. The western Snake River Plain is a relatively flat lowland separating Cretaceous granitic mountains of west-central Idaho from the granitic/volcanic Owyhee mountains in southwestern Idaho. The western Snake River Plain extends from about Twin Falls, Idaho northwestward to Vale, Oregon. The Snake River Plain is about 30 miles wide in the section containing the lower Boise River.

Sediments originating from the surrounding mountains began accumulating on top of thick, basal basalts. Rifting and continued subsidence maintained the lowland topography, leading to the additional accumulation of water and sediments (Othberg, 1994). Basin infilling by sediments and basalt occurred from the late Miocene through the late Pliocene (Othberg, 1994). Incision caused by flowing water in major drainages (e.g., Snake and Boise Rivers) began in the late Pliocene or early Pleistocene, although deposition of coarse sediments continued during Quaternary glaciations (Othberg, 1994).

Several Quaternary basalt flows have been described in the western Snake River Plain, and have been assigned to the upper Snake River Group (Malde, 1991; Malde and Powers, 1962). Lava flowed across portions of the ancestral Snake River Valley (Malde, 1991) in an area that is now south of the Boise River. The Snake River then changed course, incising at its present location along the southern margin of the basalt flows. More recent eruptions (from Kuna Butte and other local sources) spilled lava into the canyon south of Melba. The Snake River has since incised this basalt (Malde, 1991).

The general stratigraphy of the western Snake River Plain consists of (from top to bottom) a thick layer of sedimentary deposits underlain by a thick series of basalt flows, which in turn are underlain by older, tuffaceous sediments and basalt (Malde, 1991; Clemens, 1993). The upper thick zone of sediments (up to approximately 6,000 feet thick) distinguishes the western Snake River Plain from the eastern Snake River Plain, in which the upper section is primarily Quaternary basalt (Wood and Anderson, 1981).

The uppermost sediments and basalt belong to the Pleistocene-age Snake River Group. The Snake River Group consists of terrace sediments, Quaternary alluvium, and Pleistocene basalt flows (Wood and Anderson, 1981). Snake River Group sediments and basalts cover much of the project area (Othberg and Stanford, 1992).

The Snake River Group overlies the Idaho Group sediments. The Idaho Group sediments can be divided into two general parts (Wood and Anderson, 1981). The lower Idaho Group contains sediments described as lake and stream deposits of buff white, brown, and gray sand, silt, clay, diatomite, numerous thin beds of vitric ash, and some basaltic tuffs. The upper part of the lower Idaho Group also contains some local, thin, basalt flows. The upper Idaho Group consists of sands, claystones, and siltstones, but differs from the lower Idaho Group in that it contains a greater percentage of coarser-grained materials. The upper Idaho Group are associated with a fluvial/deltaic/lacustrine depositional environment; the lower Idaho Group sediments were deposited in more of a lacustrine/deltaic environment (Wood, 1994).

Wood (1994) identified a buried lacustrine delta within the Idaho Group sediments in the Nampa-Caldwell area. The location of the delta in the middle of the western Snake River Plain suggests that the eastern part of the Boise River basin was delta plain and flood plain at the time of deposition, while the western part was a deep lake environment. The delta probably prograded northwestward into a lake basin 830 feet deep, based upon high resolution seismic reflection data and resistivity log interpretations. The delta-plain and front sediments were shown to be mostly fine-grained, well-sorted sand with thin layers of mud (Wood, 1994). The northwest trend of the delta indicates a sediment source to the southeast, such as where the Snake River flows today (Wood, 1994).

A substantial, laterally extensive layer of clay is found at depths of 300 to 700 feet below ground surface. The clay is important because it represents, in some areas, a significant aquitard separating shallow overlying aquifers from deeper zones. The clay, often described in well logs as having a blue or gray color, has been observed as far west as Parma, and as far east as Boise (although the clay is not found in the extreme eastern portions of the Treasure Valley). The clay varies from a few feet to a few hundred feet in thickness. Although significant layers of clay are present throughout the Idaho Group sediments, individual clay units are not necessarily continuous over large areas. Also, the top of the clay can vary in elevation by up to approximately 200 feet in some locations, such as in an area west of Lake Lowell. In general, sediments above the “blue clay” are coarser-grained than the interbedded sands, silts, and clays underlying the “blue clay.”

The top of the upper Idaho Group is marked in several parts of the Treasure Valley by a widespread fluvial gravel deposit known as the Tenmile Gravels. Tenmile Gravels contain rounded granitic rocks and felsic porphyries originating from the Idaho Batholith to the north and northeast. The Tenmile gravels range up to 500 feet in thickness along the Tenmile Ridge south of Boise, but are less than 50 feet thick in the Nampa-Caldwell area (Wood and Anderson, 1981).

Aquifer Systems and Hydrogeologic Characteristics

Ground water for municipal, industrial, rural domestic, and irrigation uses in the Treasure Valley is drawn almost entirely from Snake River Group and Idaho Group aquifers. Many domestic wells draw water from shallow aquifers, such as those in the Snake River Group deposits. Larger production wells (for municipal and agricultural uses) draw water from the deeper Idaho Group sediments.

Aquifers contained in the Snake River and Idaho Group sediments comprise shallow and regional ground water flow systems. Shallow aquifers contained in Snake River Group sediments and basalts may belong to local flow systems. Most local flow system recharge stems from irrigation infiltration and channel (e.g., streams or canals) losses. Discharge from shallow, local flow systems often is to local drains or streams. The time from recharge to discharge in shallow flow systems (residence times) probably ranges from days to tens of years.

In contrast, regional ground water flow systems extend much deeper than local flow systems. The Treasure Valley regional flow system begins in the eastern part of the valley, as indicated by downward hydraulic gradients in the Boise Fan sediments described by Squires et al. (1992). Some water also enters the regional flow system as underflow from the Boise Foothills in the northeastern part of the valley. The regional flow system is thought to discharge primarily to the Boise and Snake Rivers in the western and southwestern parts of the valley.

Aquifer material characteristics, material heterogeneity, and structural controls influence Treasure Valley ground water flow. Coarse-grained materials (e.g., sand and gravel) in upper zones are more capable of transmitting ground water than fine-grained sediments (e.g., silt and clay). Clay and silt in the Snake River sediments can restrict vertical and/or horizontal ground water movement. Perched aquifers are created when fine-grained lenses impede downward vertical flow. A distinctive clay layer, sometimes referred to as "blue clay," is present over large portions of the valley. The clay is absent in the easternmost portions of the lower Boise River Basin, but can reach a thickness of more than 200 feet toward the central and western portions of the basin.

Sequences of interbedded sand, silt, and clay, such as the Deer Flat Surface and the upper portion of the Glens Ferry Formation of the upper Idaho Group in the Nampa-Caldwell area, are the major water-producing aquifers in a large part of Canyon County (Anderson and Wood, 1981). The coarse-grained sediments in this zone produce water in excess of 2,000 gallons per minute (gpm).

The delineated source water assessment area for all three Floating Feather Mobile Home Park wells can best be described as a southeast trending corridor approximately 3 miles long and 0.25 miles wide that crosses Old Highway 55, Union Canal, Hill Road, and extends almost to Pierce Park Lane (Figure 2, 3, and 4). The actual data used by BARR Engineering in determining the source water assessment delineation areas are available from DEQ upon request.

The delineated source water assessment area for the Fairview Mobile Home Park well can best be described as a southeast trending corridor approximately 5.5 miles long and 3 miles wide, extending almost to the Broadway Avenue exit of Interstate 84, and at its widest point, stretches from the Boise River to Interstate 84. (Figure 2). The actual data used by BARR Engineering in determining the source water assessment delineation areas are available from DEQ upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

Land use within the area surrounding the Fairview Mobile Home Park wells consists of predominately urban.

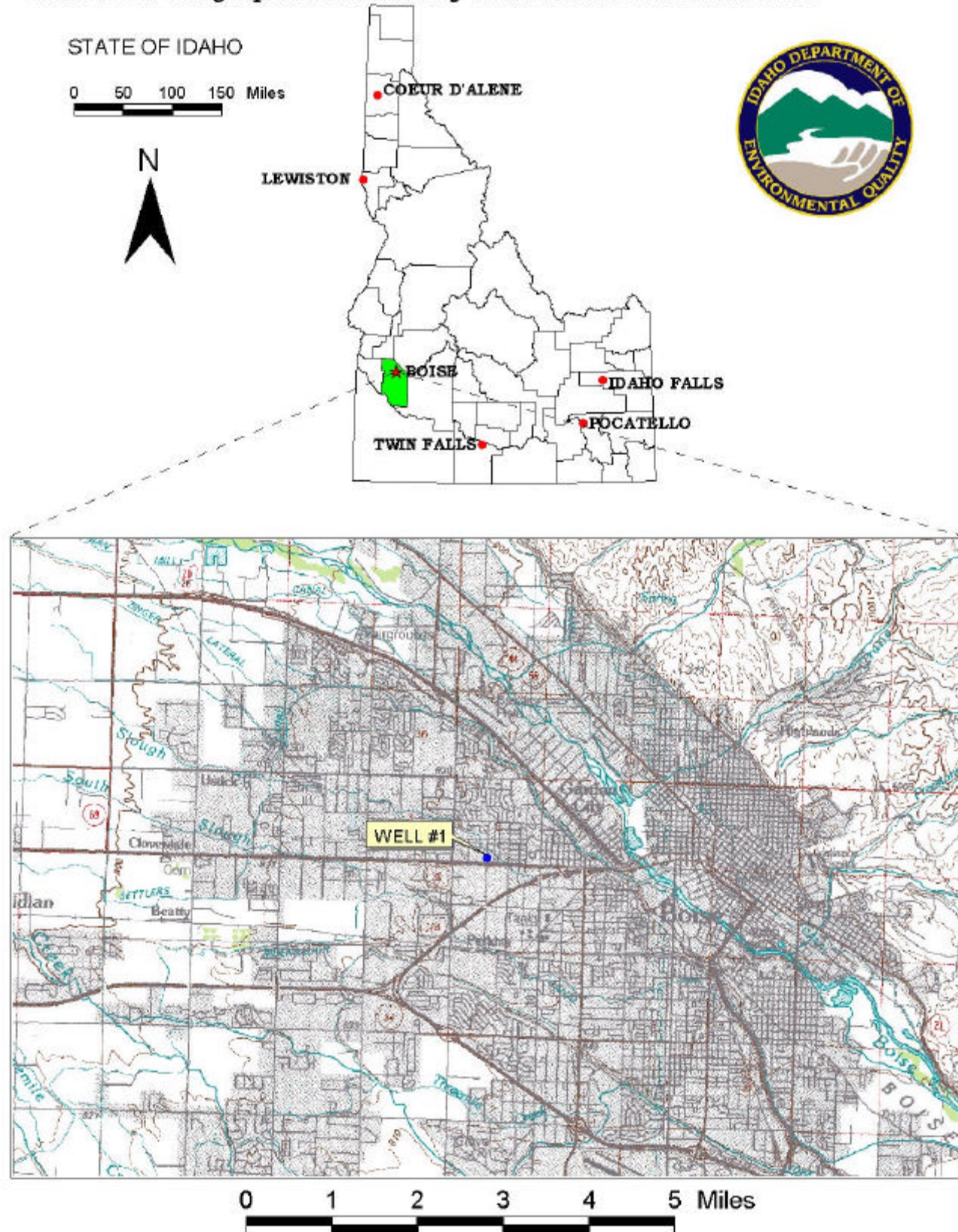
It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted in February and March 2002. The first phase involved identifying and documenting potential contaminant sources within the Fairview Mobile Home Park source water assessment area (Figure 2) through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to identify and add any additional potential sources in the delineated areas.

The delineated source water area for Well #1 (Figure 2, Appendix A; Table 2) has 517 potential contaminants sources identified by DEQ or the system's operator.

FIGURE 1. Geographic Location of Fairview Mobile Home Park



Section 3. Susceptibility Analyses

The well's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Attachment A contains the susceptibility analysis worksheets. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone (aquitard) above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

Well #1 rated high for hydrologic sensitivity. Regional soils are moderate to well-drained. No well log was available during this analysis so it is unknown if the vadose zone is permeable, the depth to first water is more than 300 feet, or if an aquitard is present.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in sanitary surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

Well #1 had high system construction scores. The well is located outside the 100-year floodplain, and the wellhead and surface seal are maintained. However, no well log was available so it is unknown if the casing and annular seal extend to a low permeability unit, or if the well's highest production is more than 100 feet below static water level.

Current PWS well construction standards are more stringent than when the well was constructed. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Some of the regulations deal with screening requirements, aquifer pump tests, use of a downturned casing vent, and thickness of casing. Table 1 of

the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Eight-inch diameter wells require a casing thickness of 0.322 inches and six inch diameter wells require a casing thickness of 0.280 inches. The well was assessed an additional system construction point because this information was unknown.

Potential Contaminant Source and Land Use

Well #1 rated moderate for IOCs (i.e. nitrates, arsenic), high for VOCs (i.e. petroleum products), moderate for SOC (i.e. pesticides), and low for microbial contaminants (i.e. bacteria). The number and location of potential contaminate sources within the delineation contributed to the scores (Appendix 1, Table 2).

Final Susceptibility Ranking

A detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. Additionally, potential contaminant sources within 50 feet of a wellhead will automatically lead to a high susceptibility rating. In this case, the well rated automatically high for VOCs due to a detection of PERC in the well (September, 1993). Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time of travel zone (Zone 1B) contribute greatly to the overall ranking. Overall, the well rated high for all classes of contaminants.

Table 1. Summary of Fairview Mobile Home Park Susceptibility Evaluation

Well	Susceptibility Scores ¹									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #1	H	M	H	M	L	H	H	H*	H	H

¹H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

H*= automatic high due to a detection of tetrachloroethylene (PCE)

Susceptibility Summary

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No SOC's have ever been tested in the well. Total coliform has been tested in distribution system (September, 1999). Traces of fluoride, radium, and natural radiation have been detected. Nitrate has been found in quantities of 2.1 ppm, well below the MCL of 10 ppm. The well exists in a priority area for the VOC PERC. PERC has been detected in the well (September, 1993). VOCs are only tested for every three years, so any detection might be an indication of a larger problem. Arsenic has been detected in the well in concentrations of 13 ppm, a level greater than the revised MCL of 10 ppm. In October, 2001, the EPA lowered the arsenic MCL from 50 ppm to 10 ppm. However, public water systems have until 2006 to meet the new requirement.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective drinking water protection program is tailored to the particular local drinking water protection area. A community with a fully developed source water protection program will incorporate many strategies. For Fairview Mobile Home Park, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey. Actions should be taken to keep a 50-foot radius circle clear around the wellheads. Any spills within the delineation should be carefully monitored and dealt with. As much of the designated protection area is outside the direct jurisdiction Fairview Mobile Home Park, making collaboration and partnerships with state and local agencies and industry groups are critical to the success of drinking water protection. The wells should maintain sanitary standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineation contains some urban and residential land uses. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. EPA. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the Ada Soil and Water Conservation District, and the Natural Resources Conservation Service.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Boise Regional Office of the DEQ or the Idaho Rural Water Association.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Boise Regional DEQ Office (208) 373-0550

State DEQ Office (208) 373-0502

Website: <http://www.deq.state.id.us>

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, Idaho Rural Water Association, at (208) 343-7001 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund® is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System)

– Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

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Attachment A

Fairview Mobile Home Park Susceptibility Analysis Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

1. System Construction

SCORE

Drill Date	unknown	
Driller Log Available	NO	
Sanitary Survey (if yes, indicate date of last survey)	YES	1995
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		4

2. Hydrologic Sensitivity

Soils are poorly to moderately drained	NO	2
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		6

3. Potential Contaminant / Land Use - ZONE 1A

IOC Score	VOC Score	SOC Score	Microbial Score
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Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	YES	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2

Potential Contaminant / Land Use - ZONE 1B

Contaminant sources present (Number of Sources)	YES	104	129	120	12
(Score = # Sources X 2) 8 Points Maximum		8	8	8	8
Sources of Class II or III leacheable contaminants or	YES	14	14	14	
4 Points Maximum		4	4	4	
Zone 1B contains or intercepts a Group 1 Area	YES	0	2	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		12	14	12	8

Potential Contaminant / Land Use - ZONE II

Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		3	3	3	0

Potential Contaminant / Land Use - ZONE III

Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0

Cumulative Potential Contaminant / Land Use Score

19	21	19	10
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4. Final Susceptibility Source Score

14	14	14	14
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5. Final Well Ranking

High	High	High	High
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Attachment B

Fairview Mobile Home Park Potential Contaminant Table

Table 2. Fairview Mobile Home Park, Well #1, Potential Contaminant Inventory

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
1	LUST Site Cleanup Incomplete , Impact: Unknown	3 YR	Database Search	IOC, VOC, SOC
3	LUST Site Cleanup Incomplete , Impact: Unknown	3 YR	Database Search	VOC, SOC
5	UST site - open	3 YR	Database Search	IOC, VOC, SOC
6	UST site - open	3 YR	Database Search	IOC, VOC, SOC
8	UST site - closed	3 YR	Database Search	VOC, SOC
10	UST site - open	3 YR	Database Search	VOC, SOC
11	UST site - closed	3 YR	Database Search	VOC, SOC
12	UST site - closed	3 YR	Database Search	VOC, SOC
13	UST site - open	3 YR	Database Search	VOC, SOC
14	UST site - closed	3 YR	Database Search	VOC, SOC
15	UST site - closed	3 YR	Database Search	VOC, SOC
16	UST site - open	3 YR	Database Search	IOC, VOC, SOC
17	UST site - closed	3 YR	Database Search	VOC, SOC
18	UST site - open	3 YR	Database Search	IOC, VOC, SOC
19	UST site - closed	3 YR	Database Search	VOC, SOC
21	UST site - closed	3 YR	Database Search	VOC, SOC
22	UST site - closed	3 YR	Database Search	VOC, SOC
24	UST site - closed	3 YR	Database Search	VOC, SOC
25	UST site - open	3 YR	Database Search	VOC, SOC
27	Embossing	3 YR	Database Search	none
28	Storage-Household & Commercial	3 YR	Database Search	IOC, VOC, SOC
29	Marking Devices (Manufacturers)	3 YR	Database Search	IOC, VOC, SOC
30	Photographers-Portrait	3 YR	Database Search	IOC, VOC
31	Lawn Maintenance	3 YR	Database Search	IOC, SOC
32	Janitor Service	3 YR	Database Search	IOC, VOC, SOC
33	Oil Producers	3 YR	Database Search	IOC, VOC, SOC
34	Storage-Household & Commercial	3 YR	Database Search	IOC, VOC, SOC
35	Automobile Dealers-Used Cars	3 YR	Database Search	IOC, VOC, SOC
36	Oils-Fuel (Wholesale)	3 YR	Database Search	VOC, SOC
37	Veterinarians	3 YR	Database Search	IOC, SOC, Microbials
38	Automobile Dealers-Used Cars	3 YR	Database Search	IOC, VOC, SOC
39	Paint-Retail	3 YR	Database Search	IOC, VOC, SOC
40	Automobile Dealers-Used Cars	3 YR	Database Search	IOC, VOC, SOC
41	Oil Producers	3 YR	Database Search	IOC, VOC, SOC
42	Hospitals	3 YR	Database Search	IOC, SOC, Microbials
43	Signs (Manufacturers)	3 YR	Database Search	IOC, VOC, SOC
45	Fire Protection Equipment & Supls	3 YR	Database Search	VOC, SOC
46	Pipe Line Companies	3 YR	Database Search	IOC, VOC, SOC
47	General Contractors	3 YR	Database Search	IOC, VOC, SOC
48	Trucking-Heavy Hauling	3 YR	Database Search	VOC, SOC
49	Controls Control Systs/Regulators	3 YR	Database Search	IOC, VOC, SOC
50	Electric Equipment & Supplies-Wholesale	3 YR	Database Search	IOC, VOC
51	Typesetting (Manufacturers)	3 YR	Database Search	IOC, VOC, SOC
52	Window Cleaning	3 YR	Database Search	VOC
53	Electrical Power Systems-Maintenance	3 YR	Database Search	IOC, VOC
54	Electric Equipment-Manufacturers	3 YR	Database Search	IOC, VOC, SOC
55	Storage-Household & Commercial	3 YR	Database Search	IOC, VOC, SOC
56	Home Improvements	3 YR	Database Search	IOC, VOC, SOC
57	Delivery Service	3 YR	Database Search	VOC, SOC
58	Optical Goods-Manufacturers	3 YR	Database Search	IOC, VOC, SOC
59	Publishers-Periodical	3 YR	Database Search	IOC, VOC
60	Electric Equipment & Supplies-Wholesale	3 YR	Database Search	IOC, VOC
61	Typesetting (Manufacturers)	3 YR	Database Search	IOC, VOC, SOC
62	Tire-Dealers-Retail	3 YR	Database Search	IOC, VOC, SOC
63	Petroleum Products (Wholesale)	3 YR	Database Search	IOC, VOC, SOC
64	Car Washing & Polishing-Coin Operated	3 YR	Database Search	IOC, VOC, SOC, Microbials
66	Veterinarians	3 YR	Database Search	IOC, VOC, Microbials

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
67	Rental Service-Stores & Yards	3 YR	Database Search	IOC, VOC, SOC
68	Floor Refinishing & Resurfacing	3 YR	Database Search	IOC, VOC, SOC
69	Automobile Seatcovers Tops & Upholstery	3 YR	Database Search	IOC, VOC, SOC
70	Building Contractors	3 YR	Database Search	IOC, VOC, SOC
71	Publishers-Periodical	3 YR	Database Search	IOC, VOC
72	Veterinarians	3 YR	Database Search	IOC, VOC, Microbials
73	Candles-Manufacturers	3 YR	Database Search	IOC, VOC, SOC
74	Microfilming Service Equipment	3 YR	Database Search	IOC, VOC, SOC
75	Screen Printing	3 YR	Database Search	IOC, VOC
76	Laboratories-Medical	3 YR	Database Search	IOC, VOC, SOC
77	Electric Equipment & Supplies-Wholesale	3 YR	Database Search	IOC, VOC
78	Automobile Machine Shop Service	3 YR	Database Search	IOC, VOC, SOC
79	General Contractors	3 YR	Database Search	IOC, VOC, SOC
80	Laboratories-Medical	3 YR	Database Search	IOC, VOC, SOC, Microbials
81	Laundries	3 YR	Database Search	IOC, VOC, SOC, Microbials
82	Ranches	3 YR	Database Search	IOC, VOC, SOC, Microbials
83	Motorcycles & Motor Scooters-Rpr	3 YR	Database Search	IOC, VOC, SOC
84	Printers	3 YR	Database Search	IOC, VOC
85	Plumbing Fixtures & Supplies-Wholesale	3 YR	Database Search	IOC, VOC, SOC
86	Oil Additives-Distributors	3 YR	Database Search	IOC, VOC, SOC
87	Welding	3 YR	Database Search	IOC, VOC
88	Veterinarians	3 YR	Database Search	IOC, SOC, Microbials
91	Electric Equipment & Supplies-Wholesale	3 YR	Database Search	IOC, VOC
92	Plumbing Fixtures & Supplies-Wholesale	3 YR	Database Search	VOC, SOC
93	Home Builders	3 YR	Database Search	IOC, VOC, SOC
94	Laboratories-Dental	3 YR	Database Search	IOC, VOC, SOC
95	Bicycles-Dealers	3 YR	Database Search	IOC, VOC, SOC
96	Plumbing Fixtures & Supplies-Wholesale	3 YR	Database Search	VOC, SOC
97	Automobile Dealers-Used Cars	3 YR	Database Search	IOC, VOC, SOC
98	Controls Control Systs/Regulators	3 YR	Database Search	IOC, VOC, SOC
99	Building Contractors	3 YR	Database Search	IOC, VOC, SOC
100	Laboratories-Dental	3 YR	Database Search	IOC, VOC, SOC
101	Signs (Manufacturers)	3 YR	Database Search	IOC, VOC, SOC
102	Bicycles-Dealers	3 YR	Database Search	IOC, VOC, SOC
108	Plumbing Fixtures & Supplies-Wholesale	3 YR	Database Search	IOC, VOC, SOC
109	Photo Finishing-Retail	3 YR	Database Search	IOC, VOC
110	Service Stations-Gasoline & Oil	3 YR	Database Search	IOC, VOC, SOC
111	Service Stations-Gasoline & Oil	3 YR	Database Search	VOCIOC, SOC
112	Home Improvements	3 YR	Database Search	IOC, VOC, SOC
113	Veterinarians	3 YR	Database Search	IOC, SOC, Microbials
114	General Contractors	3 YR	Database Search	IOC, VOC, SOC
115	Plating (Manufacturers)	3 YR	Database Search	IOC, VOC
116	Laboratories-Medical	3 YR	Database Search	IOC, VOC, SOC, Microbials
117	Stone Cutters	3 YR	Database Search	IOC, VOC, SOC
118	Laboratories-Medical	3 YR	Database Search	IOC, VOC, SOC
119	Swimming Pool Contrs Dlrs & Design	3 YR	Database Search	IOC, SOC
120	Microfilming Service Equipment	3 YR	Database Search	IOC, VOC, SOC
121	Service Stations-Gasoline & Oil	3 YR	Database Search	IOC, VOC, SOC
122	Water Works Equipment & Supplies	3 YR	Database Search	IOC, VOC, SOC
123	Trucking-Motor Freight	3 YR	Database Search	VOC, SOC
124	RCRA site	3 YR	Database Search	IOC, VOC, SOC
125	RCRA site	3 YR	Database Search	IOC, VOC, SOC
126	RCRA site	3 YR	Database Search	IOC, VOC, SOC
127	RCRA site	3 YR	Database Search	IOC, VOC, SOC
128	RCRA site	3 YR	Database Search	IOC, VOC, SOC
131	RCRA site	3 YR	Database Search	VOC, SOC
132	RCRA site	3 YR	Database Search	IOC, VOC, SOC
133	RCRA site	3 YR	Database Search	VOC, SOC
134	RCRA site	3 YR	Database Search	IOC, VOC, SOC
137	RCRA site	3 YR	Database Search	IOC, VOC, SOC

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
139	SARA	3 YR	Database Search	IOC, VOC, SOC
140	SARA	3 YR	Database Search	IOC, VOC, SOC
141	SARA	3 YR	Database Search	VOC, SOC
142	SARA	3 YR	Database Search	IOC, SOC
144	SARA	3 YR	Database Search	IOC, VOC, SOC
146	SARA	3 YR	Database Search	IOC, VOC, SOC
147	SARA	3 YR	Database Search	IOC, VOC, SOC
148	SARA	3 YR	Database Search	IOC, VOC, SOC
149	SARA	3 YR	Database Search	VOC, SOC
150	SARA	3 YR	Database Search	VOC, SOC
152	AST	3 YR	Database Search	IOC, VOC, SOC
153	AST	3 YR	Database Search	VOC, SOC
103, 104, 105, 106, 107, 136, 143	Hospitals x4, Newsletters (Manufacturers); RCRA site; SARA	3 YR	Database Search	IOC, SOC, Microbials
145, 151	SARA; AST site	3 YR	Database Search	IOC, VOC
2, 20, 130	LUST Site Cleanup Incomplete , Impact: Unknown; UST site - closed; RCRA site	3 YR	Database Search	VOC, SOC
23, 26	UST site - open; UST site - open	3 YR	Database Search	VOC, SOC
4, 138	UST site - open; SARA	3 YR	Database Search	VOC, SOC
44, 129	Automobile Body-Repairing & Painting; RCRA site	3 YR	Database Search	IOC, VOC, SOC
65, 154	Oils-Fuel (Wholesale); AST site	3 YR	Database Search	IOC, VOC, SOC
7, 89, 135	UST site - closed; Recycling Centers (Wholesale); RCRA site	3 YR	Database Search	VOC, SOC
9, 90	UST site - closed; Movers	3 YR	Database Search	VOC, SOC
157	LUST Site Cleanup Completed , Impact: Unknown	6 YR	Database Search	VOC, SOC
162	LUST Site Cleanup Completed , Impact: Unknown	6 YR	Database Search	IOC, VOC, SOC
163	LUST Site Cleanup Completed , Impact: Unknown	6 YR	Database Search	IOC, VOC, SOC
167	UST site - open	6 YR	Database Search	IOC, VOC, SOC
168	UST site - closed	6 YR	Database Search	VOC, SOC
169	UST site - closed	6 YR	Database Search	VOC, SOC
171	UST site - closed	6 YR	Database Search	VOC, SOC
172	UST site - closed	6 YR	Database Search	VOC, SOC
173	UST site - closed	6 YR	Database Search	VOC, SOC
175	UST site - open	6 YR	Database Search	IOC, VOC, SOC
177	UST site - closed	6 YR	Database Search	VOC, SOC
179	UST site - open	6 YR	Database Search	IOC, VOC, SOC
180	UST site - open	6 YR	Database Search	IOC, VOC, SOC
181	UST site - open	6 YR	Database Search	IOC, VOC, SOC
184	UST site - closed	6 YR	Database Search	VOC, SOC
185	UST site - closed	6 YR	Database Search	VOC, SOC
186	UST site - closed	6 YR	Database Search	VOC, SOC
187	UST site - closed	6 YR	Database Search	VOC, SOC
188	UST site - closed	6 YR	Database Search	VOC, SOC
189	UST site - closed	6 YR	Database Search	VOC, SOC
190	UST site - closed	6 YR	Database Search	VOC, SOC
191	UST site - open	6 YR	Database Search	IOC, VOC, SOC
192	UST site - closed	6 YR	Database Search	VOC, SOC
195	Landscape Contractors	6 YR	Database Search	IOC, SOC
196	Delivery Service	6 YR	Database Search	IOC, VOC, SOC
197	Janitor Service	6 YR	Database Search	IOC, VOC, SOC
198	Taxicabs	6 YR	Database Search	IOC, VOC, SOC
199	Automobile Detail & Clean-Up Service	6 YR	Database Search	IOC, VOC, SOC
200	Remodeling/Repairing Bldg Contract	6 YR	Database Search	IOC, VOC, SOC
201	Veterinarians	6 YR	Database Search	IOC, SOC
202	Aircraft Servicing & Maintenance	6 YR	Database Search	IOC, VOC, SOC
203	Radio/Tv Broadcasting/Comm Equip	6 YR	Database Search	IOC, VOC, SOC

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
204	Tire-Dealers-Retail	6 YR	Database Search	IOC, VOC, SOC
205	Machine Shops	6 YR	Database Search	IOC, VOC, SOC
206	Demolition Contractors	6 YR	Database Search	IOC, VOC, SOC
207	Transportation	6 YR	Database Search	IOC, VOC, SOC
208	Floor Refinishing & Resurfacing	6 YR	Database Search	IOC, VOC, SOC
209	Carpet & Rug Cleaners	6 YR	Database Search	IOC, VOC, SOC
210	Home Builders	6 YR	Database Search	IOC, VOC, SOC
211	Jewelry-Manufacturers	6 YR	Database Search	IOC, VOC, SOC
212	Automobile Body Shop Equip/Supls	6 YR	Database Search	IOC, VOC, SOC
213	Automobile Repairing & Service	6 YR	Database Search	IOC, VOC, SOC
214	Automobile Repairing & Service	6 YR	Database Search	IOC, VOC, SOC
216	Painters	6 YR	Database Search	VOC
219	Motorcycles & Motor Scooters	6 YR	Database Search	IOC, VOC, SOC
221	Tile-Ceramic-Contractors & Dealers	6 YR	Database Search	IOC, VOC, SOC
222	Septic Tanks-Cleaning & Repairing	6 YR	Database Search	IOC, VOC, SOC
223	Road Service-Automotive	6 YR	Database Search	IOC, VOC, SOC
225	General Contractors	6 YR	Database Search	IOC, VOC, SOC
227	Tire-Dealers-Retail	6 YR	Database Search	IOC, VOC, SOC
228	Automobile Repairing & Service	6 YR	Database Search	IOC, VOC, SOC
229	Carpet & Rug Cleaners	6 YR	Database Search	IOC, VOC, SOC
230	Automobile Repairing & Service	6 YR	Database Search	IOC, VOC, SOC
231	Wineries	6 YR	Database Search	IOC, VOC, SOC
232	Concrete Contractors	6 YR	Database Search	IOC, VOC, SOC
233	Cleaners	6 YR	Database Search	VOC
234	Cleaners-Upholstery	6 YR	Database Search	VOC
235	Cleaners	6 YR	Database Search	VOC
236	General Contractors	6 YR	Database Search	IOC, VOC, SOC
237	Landscape Contractors	6 YR	Database Search	IOC, SOC
238	Phonograph Record/Prerecorded Tape	6 YR	Database Search	
240	Painters	6 YR	Database Search	IOC, VOC, SOC
241	Tire-Dealers-Retail	6 YR	Database Search	IOC, VOC, SOC
242	Automobile Lubrication Service	6 YR	Database Search	IOC, VOC, SOC
243	Excavating Contractors	6 YR	Database Search	IOC, VOC, SOC
244	Car Washing & Polishing	6 YR	Database Search	IOC, VOC, SOC
245	General Contractors	6 YR	Database Search	IOC, VOC, SOC
246	Contractors-Equip/Supls-Dlrs/Svc	6 YR	Database Search	IOC, VOC, SOC
247	Janitor Service	6 YR	Database Search	IOC, VOC, SOC
248	Grease Traps (Cleaning Service)	6 YR	Database Search	IOC, VOC, SOC
249	General Contractors	6 YR	Database Search	IOC, VOC, SOC
250	Fishing Tackle-Manufacturers	6 YR	Database Search	IOC, VOC, SOC
251	Transmissions-Automobile	6 YR	Database Search	IOC, VOC, SOC
252	Fire Protection Equipment & Supplies	6 YR	Database Search	IOC, VOC, SOC
253	Newspapers (Publishers)	6 YR	Database Search	IOC, VOC
254	Landscape Contractors	6 YR	Database Search	IOC, VOC, SOC
255	Printers	6 YR	Database Search	IOC, VOC
256	Automobile Repairing & Service	6 YR	Database Search	IOC, VOC, SOC
257	Lawn Maintenance	6 YR	Database Search	IOC, SOC
258	Automobile Dealers-New Cars	6 YR	Database Search	IOC, VOC, SOC
259	Property Maintenance	6 YR	Database Search	IOC, VOC, SOC
260	Building Contractors	6 YR	Database Search	IOC, VOC, SOC
261	Boat Dealers	6 YR	Database Search	IOC, VOC, SOC
262	Automobile Electric Service	6 YR	Database Search	IOC, SOC
263	Transmissions-Automobile	6 YR	Database Search	IOC, VOC, SOC
264	General Contractors	6 YR	Database Search	IOC, VOC, SOC
265	Newspapers (Publishers)	6 YR	Database Search	IOC, VOC
266	Leather Goods-Manufacturer	6 YR	Database Search	IOC, VOC, SOC
267	Publishers-Periodical	6 YR	Database Search	IOC, VOC
268	Automobile Body Shop Equip/Supls	6 YR	Database Search	IOC, VOC, SOC
269	Artists-Commercial	6 YR	Database Search	IOC, VOC, SOC
270	Industrial Equipment & Supplies	6 YR	Database Search	IOC, VOC, SOC

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
271	Carpet & Rug Repairing	6 YR	Database Search	IOC, VOC, SOC
272	Toys-Manufacturers	6 YR	Database Search	IOC, VOC, SOC
273	Publishers-Periodical	6 YR	Database Search	IOC, VOC
274	Surgical Instruments-Manufacturers	6 YR	Database Search	IOC, VOC, SOC
275	Wheel Alignment-Frame & Axle Service	6 YR	Database Search	IOC, VOC, SOC
276	Tree Service	6 YR	Database Search	IOC, SOC
277	Publishers-Book	6 YR	Database Search	IOC, VOC
278	Cleaners	6 YR	Database Search	VOC
279	Signs (Manufacturers)	6 YR	Database Search	IOC, VOC, SOC
280	Automobile Repairing & Service	6 YR	Database Search	IOC, VOC, SOC
282	Automobile Parts & Supplies-Retail	6 YR	Database Search	IOC, VOC, SOC
283	Trailers-Truck (Wholesale)	6 YR	Database Search	IOC, VOC, SOC
284	General Contractors	6 YR	Database Search	IOC, VOC, SOC
285	Bus Lines	6 YR	Database Search	IOC, VOC, SOC
286	Roofing Contractors	6 YR	Database Search	IOC, VOC, SOC
289	Building Contractors	6 YR	Database Search	IOC, VOC, SOC
290	Patio Porch & Deck Enclosures	6 YR	Database Search	IOC, VOC, SOC
291	Trucking-Local Cartage	6 YR	Database Search	IOC, VOC, SOC
292	Service Stations-Gasoline & Oil	6 YR	Database Search	IOC, VOC, SOC
293	Home Builders	6 YR	Database Search	IOC, VOC, SOC
294	Automobile Lubrication Service	6 YR	Database Search	IOC, VOC, SOC
296	Roofing Contractors	6 YR	Database Search	IOC, VOC, SOC
297	Drapery & Curtain Cleaners	6 YR	Database Search	VOC
298	Funeral Directors	6 YR	Database Search	IOC, SOC
299	Publishers-Book	6 YR	Database Search	IOC, VOC
300	Newsletters (Manufacturers)	6 YR	Database Search	IOC, VOC
301	Car Washing/Polishing Equip/Supls	6 YR	Database Search	IOC, VOC, SOC
302	Photographers-Portrait	6 YR	Database Search	IOC, VOC
303	General Contractors	6 YR	Database Search	IOC, VOC, SOC
304	Automobile Parts & Supplies-Retail	6 YR	Database Search	IOC, VOC, SOC
305	Building Contractors	6 YR	Database Search	IOC, VOC, SOC
306	Motorcycles & Motor Scooters-Dealer	6 YR	Database Search	IOC, VOC, SOC
307	Service Stations-Gasoline & Oil	6 YR	Database Search	IOC, VOC, SOC
308	Storage-Household & Commercial	6 YR	Database Search	IOC, VOC, SOC
309	Home Improvements	6 YR	Database Search	IOC, VOC, SOC
310	Photographers-Portrait	6 YR	Database Search	IOC, VOC
311	Copying Machines & Supplies-Mfrs	6 YR	Database Search	IOC, VOC
312	Publishers-Book	6 YR	Database Search	IOC, VOC
313	Publishers-Book	6 YR	Database Search	IOC, VOC
314	Lawn Maintenance	6 YR	Database Search	IOC, VOC, SOC
315	Barbers Equipment & Supplies	6 YR	Database Search	IOC, VOC, SOC
316	Excavating Contractors	6 YR	Database Search	IOC, VOC, SOC
320	Federal Government-National Security	6 YR	Database Search	IOC, VOC, SOC
323	Delivery Service	6 YR	Database Search	IOC, VOC, SOC
324	General Contractors	6 YR	Database Search	IOC, VOC, SOC
327	RCRA site	6 YR	Database Search	IOC, SOC
328	RCRA site	6 YR	Database Search	IOC, VOC, SOC
333	RCRA site	6 YR	Database Search	IOC, VOC, SOC
334	RCRA site	6 YR	Database Search	IOC, VOC, SOC
335	RCRA site	6 YR	Database Search	VOC
336	RCRA site	6 YR	Database Search	VOC
337	Sand and gravel pit	6 YR	Database Search	IOC, VOC, SOC
338	Sand and gravel pit	6 YR	Database Search	IOC, VOC, SOC
339	SARA	6 YR	Database Search	IOC, VOC, SOC
340	SARA	6 YR	Database Search	IOC, VOC, SOC
341	SARA	6 YR	Database Search	IOC, VOC, SOC
342	SARA	6 YR	Database Search	IOC, VOC, SOC
343	SARA	6 YR	Database Search	IOC, VOC, SOC
344	SARA	6 YR	Database Search	IOC, VOC, SOC
345	SARA	6 YR	Database Search	IOC, VOC, SOC

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
346	group1	6 YR	Database Search	IOC
155, 164, 166, 224	LUST Site Cleanup Completed , Impact: GROUND WATER; LUST Site Cleanup Completed , Impact: Unknown; UST site - open; Buses-Charter & Rental	6 YR	Database Search	VOC, SOC
156, 170, 281	LUST Site Cleanup Completed , Impact: GROUND WATER; UST site - closed; Cemeteries	6 YR	Database Search	VOC, SOC
158, 174	LUST Site Cleanup Completed , Impact: Unknown; UST site - closed	6 YR	Database Search	VOC, SOC
159, 194, 329	LUST Site Cleanup Completed , Impact: GROUND WATER; UST site - closed; RCRA site	6 YR	Database Search	VOC, SOC
160, 176, 239, 326	LUST Site Cleanup Completed , Impact: Unknown; UST site - closed; Service Station Equipment (Wholesale); RCRA site	6 YR	Database Search	IOC, VOC, SOC
161, 183	LUST Site Cleanup Completed , Impact: Unknown; UST site - closed	6 YR	Database Search	VOC, SOC
165, 182	LUST Site Cleanup Incompleted , Impact: POSSIBLE GROUND WATER; UST site - closed	6 YR	Database Search	VOC, SOC
178, 215	UST site - closed; Wrecker Service	6 YR	Database Search	VOC, SOC
193, 226	UST site - closed; Rental Service-Stores & Yards	6 YR	Database Search	VOC, SOC
217, 218	Veterinarians	6 YR	Database Search	IOC, SOC
220, 325	Automobile Repairing & Service; RCRA site	6 YR	Database Search	IOC, VOC, SOC
287, 330	Automobile Body-Repairing & Painting; RCRA site	6 YR	Database Search	IOC, VOC, SOC
288, 331	Printers; RCRA site	6 YR	Database Search	IOC, VOC
295, 332	Automobile Radiator-Repairing; RCRA site	6 YR	Database Search	IOC, VOC, SOC
317, 318, 319	Truck Renting & Leasing	6 YR	Database Search	IOC, VOC, SOC
321, 322	General Contractors	6 YR	Database Search	IOC, VOC, SOC
347	LUST Site Cleanup Incomplete , Impact: GROUND WATER	10 YR	Database Search	IOC, VOC, SOC
348	LUST Site Cleanup Incomplete , Impact: Unknown	10 YR	Database Search	IOC, VOC, SOC
349	LUST Site Cleanup Complete , Impact: GROUND WATER	10 YR	Database Search	VOC, SOC
350, 383	LUST Site Cleanup Incomplete , Impact: GROUND WATER; UST site - open	10 YR	Database Search	IOC, VOC, SOC
351, 360, 420	LUST Site Cleanup Completed , Impact: Unknown; UST site - open; Service Stations-Gasoline & Oil	10 YR	Database Search	IOC, VOC, SOC
352	LUST Site Cleanup Completed , Impact: Unknown	10 YR	Database Search	VOC, SOC
353, 361	LUST Site Cleanup Completed , Impact: Unknown; UST site - closed	10 YR	Database Search	VOC, SOC
354, 363	LUST Site Cleanup Completed , Impact: Unknown; UST site - closed	10 YR	Database Search	VOC, SOC
355	LUST Site Cleanup Completed , Impact: Unknown	10 YR	Database Search	VOC, SOC
356	LUST Site Cleanup Completed , Impact: Unknown	10 YR	Database Search	VOC, SOC
357	LUST Site Cleanup Completed , Impact: Unknown	10 YR	Database Search	VOC, SOC
358	LUST Site Cleanup Completed , Impact: Unknown	10 YR	Database Search	VOC, SOC
359	LUST Site Cleanup Incomplete , Impact: Unknown	10 YR	Database Search	VOC, SOC
362	UST site - closed	10 YR	Database Search	VOC, SOC
364	UST site - closed	10 YR	Database Search	VOC, SOC
365	UST site - closed	10 YR	Database Search	VOC, SOC
366	UST site - open	10 YR	Database Search	IOC, VOC, SOC
367	UST site - closed	10 YR	Database Search	VOC, SOC

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
368, 498	UST site - closed; RCRA site	10 YR	Database Search	VOC, SOC
369	UST site - open	10 YR	Database Search	IOC, VOC, SOC
370	UST site - closed	10 YR	Database Search	VOC, SOC
371	UST site - open	10 YR	Database Search	IOC, VOC, SOC
372, 407	UST site - open; Service Stations-Gasoline & Oil	10 YR	Database Search	IOC, VOC, SOC
373	UST site - open	10 YR	Database Search	IOC, VOC, SOC
374	UST site - closed	10 YR	Database Search	VOC, SOC
375	UST site - open	10 YR	Database Search	IOC, VOC, SOC
376	UST site - closed	10 YR	Database Search	VOC, SOC
377, 391	UST site - open; Service Stations-Gasoline & Oil	10 YR	Database Search	IOC, VOC, SOC
378	UST site - open	10 YR	Database Search	IOC, VOC, SOC
379, 515	UST site - open; SARA	10 YR	Database Search	IOC, VOC, SOC
380	UST site - closed	10 YR	Database Search	VOC, SOC
381	UST site - open	10 YR	Database Search	IOC, VOC, SOC
382	UST site - closed	10 YR	Database Search	VOC, SOC
384	UST site - closed	10 YR	Database Search	VOC, SOC
385	UST site - closed	10 YR	Database Search	VOC, SOC
386	UST site - open	10 YR	Database Search	VOC, SOC
387	UST site - closed	10 YR	Database Search	VOC, SOC
388	Home Improvements	10 YR	Database Search	IOC, VOC, SOC
389	Printing Equipment-Repairing	10 YR	Database Search	IOC, VOC
390, 493	Waste Disposal-Hazardous; RCRA Site	10 YR	Database Search	IOC, VOC, SOC
392	Repair Shops & Related Services	10 YR	Database Search	IOC, VOC, SOC
393	Semiconductor Devices (Manufacture)	10 YR	Database Search	IOC, VOC, SOC
394	Automobile Repairing & Service	10 YR	Database Search	IOC, VOC, SOC
395	Automobile Parts & Supplies-Retail	10 YR	Database Search	IOC, VOC, SOC
396	Automobile Repairing & Service	10 YR	Database Search	IOC, VOC, SOC
397	General Contractors	10 YR	Database Search	IOC, VOC, SOC
398	Steel Erectors	10 YR	Database Search	IOC, VOC, SOC
399	Cleaners	10 YR	Database Search	VOC
400	Carpet & Rug Cleaners	10 YR	Database Search	IOC, VOC, SOC
401	General Contractors	10 YR	Database Search	IOC, VOC, SOC
402	Gasoline-Wholesale	10 YR	Database Search	IOC, VOC, SOC
403	Landscape Contractors	10 YR	Database Search	IOC, SOC
404	Contractors-Equipment & Supls	10 YR	Database Search	IOC, VOC, SOC
405	Automobile Radiator-Repairing	10 YR	Database Search	IOC, VOC, SOC
406	Tree Service	10 YR	Database Search	IOC, SOC
408	Recreational Vehicles-Storage	10 YR	Database Search	IOC, VOC, SOC
409	Automobile Renting & Leasing	10 YR	Database Search	IOC, VOC, SOC
410	Bicycles-Dealers	10 YR	Database Search	IOC, VOC, SOC
411	Lawn Maintenance	10 YR	Database Search	IOC, SOC
412	Newspapers (Publishers)	10 YR	Database Search	IOC, VOC
413	Contractors-Equip/Supls-Dlrs/Svc	10 YR	Database Search	IOC, SOCVOC
414	Boat Repairing	10 YR	Database Search	IOC, VOC, SOC
415, 497	Automobile Body-Repairing & Painting; RCRA site	10 YR	Database Search	IOC, VOC, SOC
416	Contractors-Equip/Supls-Dlrs/Svc	10 YR	Database Search	IOC, VOC, SOC
417	Conveyors & Conveying Equipment-Mfg	10 YR	Database Search	IOC, VOC, SOC
418	Log Cabins Homes & Buildings	10 YR	Database Search	IOC, VOC, SOC
419	Landscape Contractors	10 YR	Database Search	IOC, VOC, SOC
421	Automobile Repairing & Service	10 YR	Database Search	IOC, VOC, SOC
422	Photo Finishing-Retail	10 YR	Database Search	IOC, VOC
423	Photographs-Stock	10 YR	Database Search	IOC, VOC
424	Automobile Dealers-Used Cars	10 YR	Database Search	IOC, VOC, SOC
425	Floor Refinishing & Resurfacing	10 YR	Database Search	IOC, VOC, SOC
426	Automobile Renting & Leasing	10 YR	Database Search	IOC, VOC, SOC
427	Landscape Contractors	10 YR	Database Search	IOC, SOC
428	Radio/Tv Broadcasting/Comm Equip	10 YR	Database Search	IOC, VOC

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
429	Delivery Service	10 YR	Database Search	IOC, VOC, SOC
430	Landscape Contractors	10 YR	Database Search	IOC, VOC, SOC
431	Washers-Pressure	10 YR	Database Search	IOC, VOC, SOC
432	Lawn Mowers	10 YR	Database Search	IOC, VOC, SOC
433	Oils-Petroleum-Retail	10 YR	Database Search	IOC, VOC, SOC
434	Landscape Contractors	10 YR	Database Search	IOC, SOC
435	Remodeling/Repairing Bldg Contract	10 YR	Database Search	IOC, VOC, SOC
436	Automobile Electric Service	10 YR	Database Search	IOC, VOC, SOC
437	Photographic Equip & Supplies	10 YR	Database Search	IOC, VOC
438	Automobile Renting & Leasing	10 YR	Database Search	IOC, VOC, SOC
439	Newspapers (Publishers)	10 YR	Database Search	IOC, VOC
440	Prepard Fresh-Frzn Fish/Seafoods	10 YR	Database Search	IOC, VOC, SOC
441	Automobile Repairing & Service	10 YR	Database Search	IOC, VOC, SOC
442	Tree Service	10 YR	Database Search	IOC, SOC
443	Property Maintenance	10 YR	Database Search	IOC, VOC, SOC
444	Janitor Service	10 YR	Database Search	IOC, VOC, SOC
445, 500	Printers; RCRA site	10 YR	Database Search	IOC, VOC
446	Photographers-Commercial	10 YR	Database Search	IOC, VOC
447	Electric Equipment-Manufacturers	10 YR	Database Search	IOC, VOC, SOC
448	Pest Control	10 YR	Database Search	IOC, SOC
449	Candy & Confectionery-Manufacturer	10 YR	Database Search	IOC, VOC, SOC
450	Printers	10 YR	Database Search	IOC, VOC
451	Printers	10 YR	Database Search	IOC, VOC
452	Buildings-Pre-Cut Prefab/Modular	10 YR	Database Search	IOC, VOC, SOC
453	Rental Service-Stores & Yards	10 YR	Database Search	IOC, VOC, SOC
454	Janitor Service	10 YR	Database Search	IOC, VOC, SOC
455	Excavating Contractors	10 YR	Database Search	IOC, VOC, SOC
456	General Contractors	10 YR	Database Search	IOC, VOC, SOC
457	General Contractors	10 YR	Database Search	IOC, VOC, SOC
458	Lawn Maintenance	10 YR	Database Search	IOC, SOC
459	Campgrounds	10 YR	Database Search	IOC, VOC, SOC
460	Multimedia (Manufacturers)	10 YR	Database Search	IOC, VOC, SOC
461	Office Machines NEC (Manufacturers)	10 YR	Database Search	IOC, VOC, SOC
462	Photographers-Portrait	10 YR	Database Search	IOC, VOC
463	Truck Renting & Leasing	10 YR	Database Search	IOC, VOC, SOC
464	Washers-Pressure	10 YR	Database Search	IOC, VOC, SOC
465	Painters	10 YR	Database Search	IOC, VOC
466	Automobile Dealers-Used Cars	10 YR	Database Search	IOC, VOC, SOC
467	Automobile Dealers-Used Cars	10 YR	Database Search	IOC, VOC, SOC
468	Fish Hatcheries	10 YR	Database Search	IOC, VOC, SOC
469	Truck Renting & Leasing	10 YR	Database Search	IOC, VOC, SOC
470, 471	Veterinarians Equipment & Supls (Wholesale); Veterinarians	10 YR	Database Search	IOC, SOC
472	Carpet & Rug Cleaners	10 YR	Database Search	IOC, VOC, SOC
473	Landscape Contractors	10 YR	Database Search	IOC, SOC
474	Painters	10 YR	Database Search	IOC, VOC, SOC
475	General Contractors	10 YR	Database Search	IOC, VOC, SOC
476	Storage-Household & Commercial	10 YR	Database Search	IOC, VOC, SOC
477	Home Improvements	10 YR	Database Search	IOC, VOC, SOC
478	Buses-Charter & Rental	10 YR	Database Search	IOC, VOC, SOC
479	General Contractors	10 YR	Database Search	IOC, VOC, SOC
480	General Contractors	10 YR	Database Search	IOC, VOC, SOC
481	Printers	10 YR	Database Search	IOC, VOC
482	Well Drilling	10 YR	Database Search	IOC, VOC, SOC
483	Federal Government	10 YR	Database Search	IOC, VOC, SOC
484	Livestock Auction Markets	10 YR	Database Search	IOC, SOC
485	Contractors-Equip/Supls-Dlrs/Svc	10 YR	Database Search	IOC, VOC, SOC
486	Veterinarians	10 YR	Database Search	IOC, SOC
487	Carpet & Rug Repairing	10 YR	Database Search	IOC, VOC, SOC
488	Floor Refinishing & Resurfacing	10 YR	Database Search	IOC, VOC, SOC

SITE #	Source Description ¹	TOT Zone ² (years)	Source of Information	Potential Contaminants ³
489	Roofing Contractors	10 YR	Database Search	IOC, VOC, SOC
490	Typesetting (Manufacturers)	10 YR	Database Search	IOC, VOC, SOC
491	Painters	10 YR	Database Search	IOC, VOC, SOC
492	RCRA site	10 YR	Database Search	IOC, VOC, SOC
494	RCRA site	10 YR	Database Search	IOC, VOC, SOC
495	RCRA site	10 YR	Database Search	IOC, VOC, SOC
496	RCRA site	10 YR	Database Search	IOC, VOC, SOC
499	RCRA site	10 YR	Database Search	IOC, VOC, SOC
501	RCRA site	10 YR	Database Search	VOC
502	RCRA site	10 YR	Database Search	IOC, VOC, SOC
503	RCRA site	10 YR	Database Search	IOC, VOC, SOC
504	RCRA site	10 YR	Database Search	IOC, VOC, SOC
505	RCRA site	10 YR	Database Search	IOC, VOC, SOC
506	RCRA site	10 YR	Database Search	IOC, VOC, SOC
507	Sand and gravel pit	10 YR	Database Search	IOC, VOC, SOC
508	Sand and gravel pit	10 YR	Database Search	IOC, VOC, SOC
509	Sand and gravel pit	10 YR	Database Search	IOC, VOC, SOC
510	Sand and gravel pit	10 YR	Database Search	IOC, VOC, SOC
511	SARA	10 YR	Database Search	IOC, VOC, SOC
512	SARA	10 YR	Database Search	IOC, VOC, SOC
513	SARA	10 YR	Database Search	VOC, SOC
514	SARA	10 YR	Database Search	IOC, VOC, SOC
516	SARA	10 YR	Database Search	IOC, VOC, SOC
517	group1	10 YR	Database Search	VOC

¹ AST = above ground storage tank, WLAP = waste land application site, RCRA = resource conservation recovery act, UST = underground storage tank, LUST = leaking underground storage tank, SARA = superfund amendments reauthorization act

² TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

³ IOC = inorganic chemical, SOC = synthetic organic chemical, VOC = volatile organic chemical